



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
TW20 (S/N MP3378)

Component
Diesel Engine

Fluid
VALVOLINE PREMIUM BLUE 2000 15W40 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor. Please specify the component make and model with your next sample.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0849043	WC0849051	WC0849055
Sample Date		Client Info		11 Jan 2024	13 Oct 2023	06 Sep 2023
Machine Age	hrs	Client Info		4220	3598	3314
Oil Age	hrs	Client Info		622	284	905
Filter Age	hrs	Client Info		622	284	905
Oil Changed		Client Info		Changed	Not Changd	Changed
Filter Changed		Client Info		Changed	Not Changed	Changed
Sample Status				NORMAL	NORMAL	SEVERE

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	40	16	46
Chromium	ppm	ASTM D5185m	>20	1	<1	1
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	8	8	7
Lead	ppm	ASTM D5185m	>40	0	0	0
Copper	ppm	ASTM D5185m	>330	3	2	4
Tin	ppm	ASTM D5185m	>15	0	<1	0
Vanadium	ppm	ASTM D5185m		<1	0	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

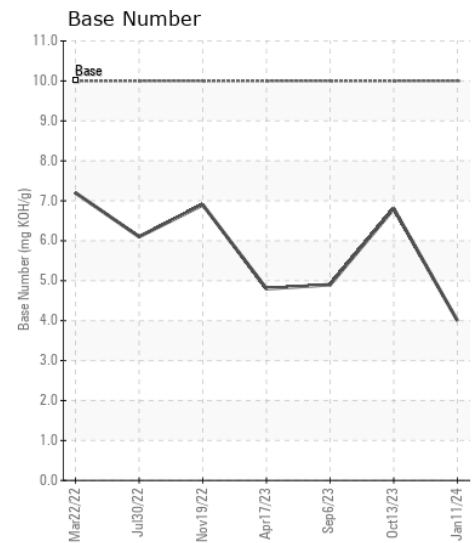
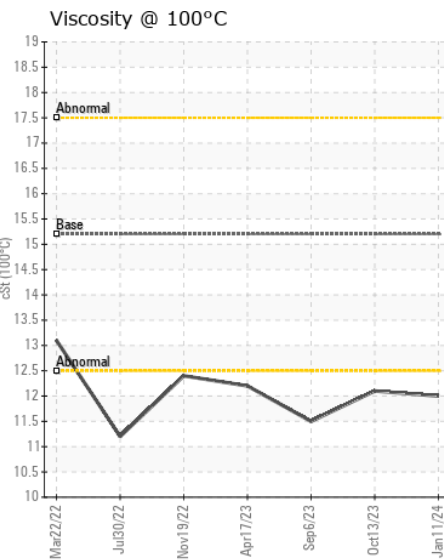
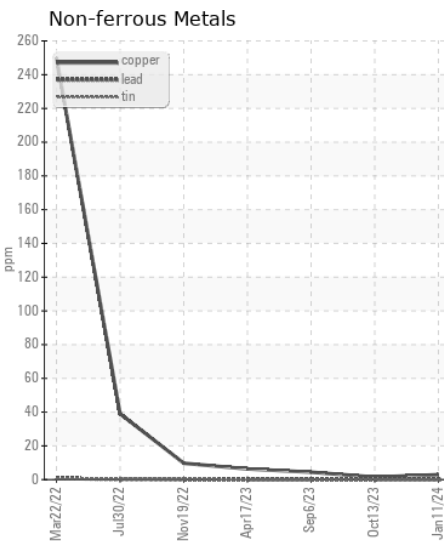
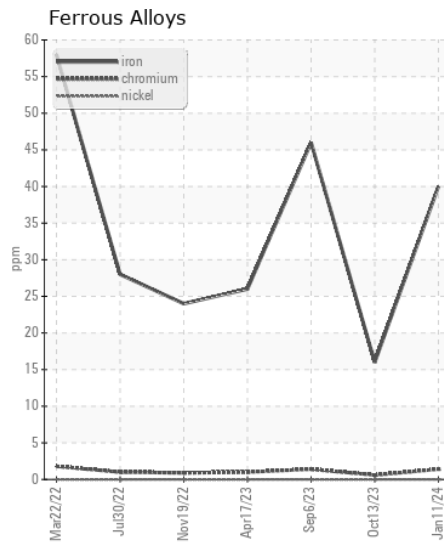
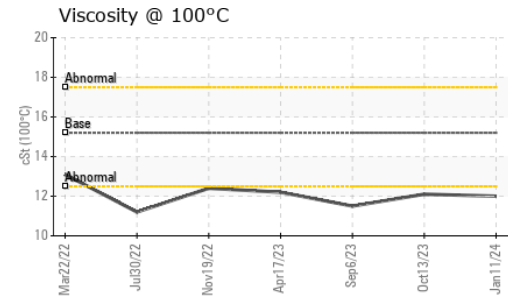
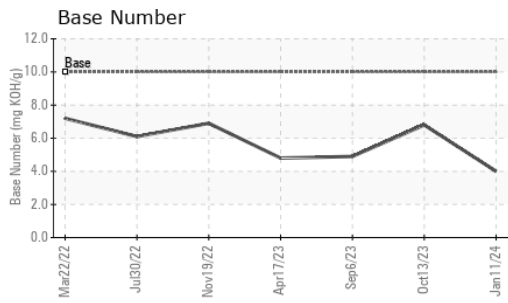
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	7	4	8
Potassium	ppm	ASTM D5185m	>20	22	20	17
Fuel		WC Method	>5	<1.0	1.2	10.5
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.7	0.3	0.6
Nitration	Abs/cm	*ASTM D7624	>20	13.0	9.5	12.4
Sulfation	Abs/.1mm	*ASTM D7415	>30	24.1	18.7	22.6
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG

FLUID CONDITION

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		2	<1	2
Boron	ppm	ASTM D5185m		20	24	18
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		61	62	83
Manganese	ppm	ASTM D5185m		<1	0	<1
Magnesium	ppm	ASTM D5185m		629	644	801
Calcium	ppm	ASTM D5185m		1103	1098	1446
Phosphorus	ppm	ASTM D5185m		637	625	696
Zinc	ppm	ASTM D5185m		802	819	919
Sulfur	ppm	ASTM D5185m		2550	2847	3162
Oxidation	Abs/.1mm	*ASTM D7414	>25	23.3	16.0	20.5
Base Number (BN)	mg KOH/g	ASTM D2896	10.0	4.0	6.8	4.9
Visc @ 100°C	cSt	ASTM D445	15.2	12.0	12.1	11.5



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0849043 **Received** : 16 Jan 2024
Lab Number : 06061805 **Diagnosed** : 18 Jan 2024
Unique Number : 10833187 **Diagnostician** : Wes Davis
Test Package : CONST (Additional Tests: TBN)

To discuss this sample report, contact Customer Service at 1-800-237-1369.

* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

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